Procedure No.	GLM-FE-8500.1-5
Revision	A
Effective Date:	4/2015
Expiration Date:	4/2020

GRC Environmental Programs Manual—Chapter 5

Management of Hazardous Waste and Resource Conservation and Recovery Act (RCRA) Compliance

Approved by: Energy and Environmental Management Office Chief

Distribution: BMS Library

NASA - Glenn Research Center
Cleveland, OH 44135

Change Record

Revision	Effective Date	Expiration Date	C-25, Change Request #	Description
A	4/2015		14-006	Corrected name of office on title page Section 1.0 - Changed Chapter 23 to Chapter 20. Section 5.2.1 – corrected name of training organization Changed from NASA C-260a to GRC260A Updated all hyperlinks.

***Include all information for each revision. Do not remove old revision data. Add new rows to table when space runs out by pressing the tab key in the last row, far right column.*

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NOTE: *This chapter is maintained and approved by the Energy and Environmental Management Office (EEMO). The last revision date of this chapter was March 2015. The current version is maintained on the Glenn Research Center intranet at http://www.grc.nasa.gov/WWW/FTD/EEMO/index.html. Approved by Chief of Energy and Environmental Management Office (EEMO).*

1.0 PURPOSE

This chapter establishes Glenn Research Center (GRC) policy and procedures and assigns responsibilities for the management of hazardous materials and hazardous and universal waste as defined in the Resource Conservation and Recovery Act (RCRA), Public Law 94–580. Soil that has been designated as hazardous is discussed in Chapter **20** Handling, Reuse, and Disposal of Soil. The management of solid waste is described in Chapter **10**, Solid Waste.

2.0 APPLICABILITY

This chapter applies to all organizational elements of GRC Lewis Field and Plum Brook Station that are involved with the processing, storage, and handling of hazardous materials or the disposal of hazardous and/or universal waste.

3.0 BACKGROUND

The management, handling, storage, and disposal of hazardous materials and hazardous and universal waste are vitally important to GRC. Improper management of these items can pose a danger to human health and the environment and can incur enforcement actions from a number of regulatory agencies. As a research center, GRC uses a wide range of hazardous materials to conduct research activities, which in turn generate hazardous waste. GRC is required to manage this waste in a manner that protects employees and the environment and meets all Federal, state, and local rules and regulations.

The use of hazardous materials results in exposure to dangers associated with the characteristics of the material. For example, the use of aviation fuel in aeronautics research presents a fire hazard. Many classes of hazardous chemicals are used at GRC, including but not limited to, ignitable, corrosive, toxic, and reactive chemicals. Each chemical shall be managed according to the hazard that it poses and the applicable regulatory requirements. There are a variety of programs in place that are designed to assist employees in the safe handling, storage, and disposal of hazardous chemicals. The programs discussed in this chapter provide guidance to employees working with hazardous chemicals on the proper procedures for management and disposal of these materials and a point of contact should any hazardous waste management issues arise.

There are various areas at GRC used to store hazardous waste. These areas are managed by the EEMO Waste Management Team (WM) and eventually are closed in accordance with the latest Ohio Environmental Protection Agency (OEPA) Closure Plan Review Guidance (CPRG). Since closure activities at each site may differ, specific procedures for closing a storage area will be determined at the time of closure.

4.0 POLICY

As a requirement of our waste minimization policy, GRC's first priority is to reduce the amount of hazardous material (chemical reduction) used, second is to reuse it, third is to recycle it, and fourth is to dispose of it as a hazardous waste. Special attention is given to the management of hazardous materials no longer required for ongoing institutional operations, research programs, or related activities. These hazardous materials shall be managed in a safe and proper manner following the requirements and standards prescribed in the RCRA regulations, GRC procedures, and all other applicable Federal and state regulations.

5.0 RESPONSIBILITIES

5.1 User

- Identifies and submits for proper management any hazardous material no longer needed for reuse, recycle, or disposal and does not dispose of hazardous materials by indiscriminately throwing the material or waste into a trash container or pouring it down a drain.
- Ensures that each hazardous material or waste to be turned in to the EEMO Waste Management (WM) is properly identified and labeled as to its contents and its potential hazard. Contact WM at 3–2124 for assistance in identifying and labeling materials and waste for disposal.
- Prepares a **GRC260A**, Waste Disposal Request, and submits it to WM for determination of proper disposal. The **GRC260A** can be found at the **NASA Electronic Forms** portal.

Figure 5.1.—Labels Used To Identify a Container of Used Oil.

Figure 5.2.—Labels Used To Identify a Container of Spent Solvent.

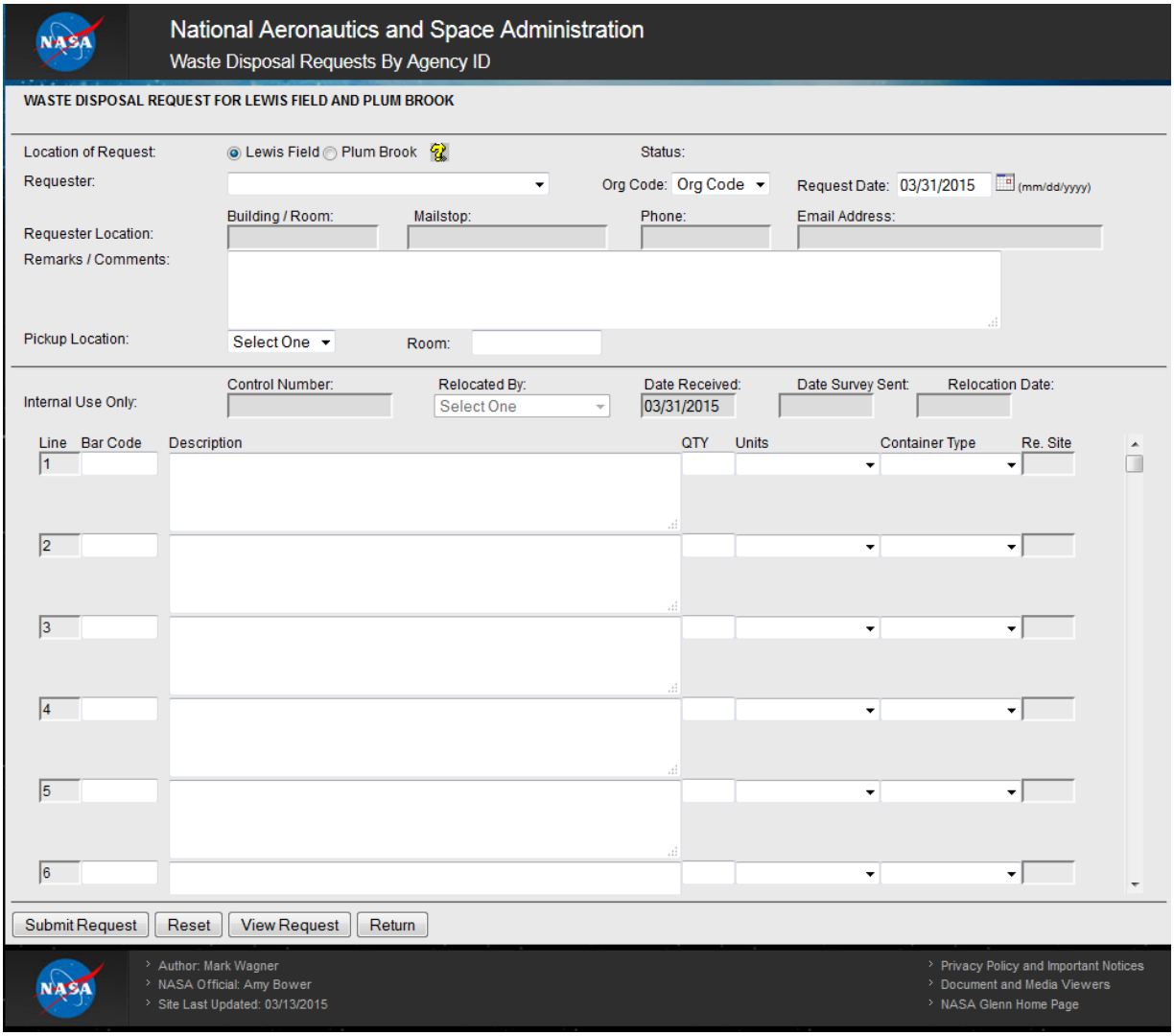

Figure 5.3.—**GRC260A**, Waste Disposal Request.

5.2 Energy and Environmental Management Office

- Oversees all hazardous waste management and disposal activities at GRC in accordance with all Federal, state, and NASA rules and regulations.
- Assures that hazardous waste disposal contractors under contract to GRC conduct their activities at a licensed and permitted waste disposal facility.
- Maintains responsibility for signing all hazardous waste manifests and shall investigate, as necessary, shipments prior to signing the manifests.
- Prepares and submits closure documentation as required by OEPA CPRG upon closure of any hazardous waste storage area.

5.2.1 Waste Management

- Develops and implements a program for managing hazardous materials and disposing of hazardous waste.
- Recommends the proper procedures to be followed when turning in hazardous material or disposing of hazardous waste. Also, provides guidance on hazardous material and hazardous waste handling and waste reduction or minimization.

- Coordinates transferring hazardous materials and waste to Building 215, the Central Chemical Storage Facility, for temporary storage (90-day maximum for materials determined to be hazardous waste) while a means of reuse, recycle, or disposal is determined.
- Determines whether hazardous material can be reused, recycled, or needs to be disposed of as hazardous waste.
- Arranges for a waste disposal contractor to pick up and deliver the hazardous waste to a disposal facility, as required.
- Reviews all hazardous material shipping documents for compliance with the provisions of Title 49 Code of Federal Regulations (CFR), Subchapter C, Parts 105–178, Department of Transportation (DOT), Hazardous Materials Regulations and Hazardous Waste Shipping Documents for compliance with the provisions of Title 40 CFR, Parts 260–370, Environmental Protection Agency (EPA), Hazardous Waste Regulations.
- Prepares, packages, marks, labels, and certifies the packaging and crating of materials and waste for shipment.
- Prepares uniform hazardous waste manifests for items such as oils, solvents, chemicals, and hazardous soils not covered by other Facilities Division (FD) contracts in accordance with EPA and DOT specifications.
- Tracks all manifests to ensure they are accounted for and properly signed.
- Maintains original files on all hazardous and nonhazardous waste shipments for regulating agency review.
- Coordinates and provides RCRA-required annual hazardous waste management training updates.
- Maintains records of required hazardous waste management training for GRC. Training records are maintained by WM and are submitted to the Human Capital Development for entry into the System for Administration, Training, and Educational Resources at NASA (SATERN) database.
- Prepares regulatory-required and NASA reports, including the OEPA Annual Generators Report for Lewis Field.
- Educates personnel on hazardous material and waste handling and reduction.
- Establishes and maintains waste accumulation areas in accordance with RCRA regulations, including closure of these areas when warranted.
- Conducts monthly inspections of satellite waste accumulation sites and weekly inspections of 90-day waste accumulation sites.

5.2.2 EEMO Plum Brook Team

- Prepares regulatory-required and NASA reports, including the EPA Annual Generators Report for the Ohio EPA for Plum Brook Station.
- Recommends and educates the proper procedures to be followed when turning in hazardous material or disposing of hazardous waste. Also, provides guidance on hazardous material and hazardous waste handling and waste reduction/minimization.
- Determines whether hazardous material can be reused, recycled, or needs to be disposed of as hazardous waste.
- Reviews all hazardous material shipping documents for compliance with the provisions of Title 49 CFR, Subchapter C, Parts 105–178, DOT Hazardous Materials Regulations and Hazardous Waste Shipping Documents for compliance with the provisions of Title 40 CFR, Parts 260–370, EPA, Hazardous Waste Regulations.
- Tracks all manifests to ensure they are accounted for and properly signed.
- Maintains original files on all hazardous and nonhazardous waste shipments for regulating agency review.
- Coordinates and provides RCRA-required annual hazardous waste management training updates.

- Educates personnel on hazardous material and waste handling and reduction.

5.3 Plum Brook Management Office

- Maintains all records on required waste management and DOT training for Plum Brook Station staff.
- Coordinates the transfer of the hazardous materials and waste to Building 9206 for temporary storage (90-day maximum for material determined to be a hazardous waste), while a means of reuse, recycle, or disposal is determined.
- Notifies EEMO Waste Management through the use of a **GRC260A** to arrange for a waste disposal contractor to pick and dispose of the hazardous waste.

5.4 Property and Equipment Management

Property and equipment management is a part of the Logistics and Technical Information Division (LTID), and is responsible for the management of NASA-owned property. Documentation of excess property that may pose an environmental hazard is forwarded to WM by an Equipment Services Representative for review to determine if the item can be sold as excess property or must be disposed of as hazardous material.

6.0 REQUIREMENTS

- Waste accumulation site managers will notify WM at 3–2124 for a hazardous waste pickup in time to assure that the waste is stored no longer than 90 days.
- All offsite shipment of waste shall be coordinated with WM.
- All hazardous waste manifests shall be signed by a designated member of The EEMO.

6.1 Training

- Employees that work with hazardous materials and generate hazardous waste are required to attend RCRA Hazardous Waste Management training annually. This training is conducted by WM and is entered into each employee's SATERN training record.
- Facility personnel who manage hazardous waste materials must complete training that teaches them to perform their duties in a way that ensures GRC compliance with EPA training requirements listed in 40 CFR 265.16 and with the Occupational Safety and Health Administration (OSHA) training requirements listed in 29 CFR 1910.120.
- Facility personnel that manage hazardous material or waste for transportation shall meet the DOT training requirements listed in 49 CFR 172.700.

6.2 Guidance

- Check workarea for chemicals that can be reduced in volume or are no longer needed. If any are found, notify supervisor and WM about minimizing or disposing of them.
- Check workarea for chemical-, oil- or fuel-type waste and if any are found, ask supervisor or WM if they are considered hazardous waste. Prepare a Waste Disposal Request (**GRC260A**) and submit to WM for pickup and disposal.
- Assure that all hazardous waste is stored for no longer than 90 days in a workarea and different waste types are not mixed in the same container. Also, check that the container is labeled, covered, and not leaking.
- Discuss ideas with supervisor and WM that might help reduce the volume of hazardous waste generated or allow reuse or recycling of hazardous materials.

6.3 Storage Area Closures

When a storage area is identified for closure, all activities related to the closure shall be coordinated with OEPA in accordance with the OEPA CPRG.

7.0 RECORDS

All of the following records are maintained by EEMO.

- U.S. EPA 8700–22, Uniform Hazardous Waste Manifest
- Land Disposal Restriction (LDR) form
- Ohio Environmental Protection Agency Annual Generators Report
- Notification of Regulated Waste Activity, EPA 8700–12
- RCRA Hazardous Waste Management Training Record
- Waste accumulation area inspection form
- Waste Management disposal contractor waste profile form

8.0 REFERENCES

The following reference items apply to RCRA closure documentation.

Document number	Document name
29 CFR, Part 1910, Subpart H	OSHA Hazardous Waste Operations and Emergency Response
40 CFR, Part 266	Recycling
40 CFR, Part 268	Land Disposal Restrictions
40 CFR, Part 273	Universal Wastes
40 CFR, Part 279	Used Oil
40 CFR, Part 61, Subpart M	National Emission Standard for Asbestos (NESHAPS)
40 CFR, Parts 260–265	Protection of Environment
41 CFR, Parts 101–142	Utilization and Disposal of Hazardous Material and Certain Categories of Property
49 CFR, DOT, Parts 100–177	Hazardous Materials Definitions
NPD 8500.1	NASA Environmental Management
NSS/FS 1740.7	Safety Standard for Handlers of Hazardous Materials
OAC 3745	Ohio EPA Hazardous Waste Regulations
OEPA CPRG	Ohio Environmental Protection Agency Closure Plan Guidance, October 2009
Public Law 94–580	Resource Conservation and Recovery Act

APPENDIX A.—DEFINITIONS AND ACRONYMS

Closure Plan Review Guidance (CPRG)

Closure.—The process of cleaning a formerly utilized hazardous waste management area in a manner that minimizes the need for further maintenance, eliminates the possibility of a future release of hazardous waste, and properly disposes or decontaminates contaminated equipment, structures and soil.

Code of Federal Regulations (CFR)

Department of Transportation (DOT)

Energy and Environmental Management Office (EEMO)

Environmental Protection Agency (EPA)

Facilities Division (FD)

Glenn Research Center (GRC)

Hazardous material.—A substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated. Title 49 CFR, Part 171.8.

Hazardous waste.—Any substance or combination of wastes in solid, liquid, semisolid, or gaseous form which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may (1) cause or significantly contribute to any increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness or (2) pose a substantial present or potential hazard to human health, safety, or environment when improperly stored, treated, transported, disposed of, or otherwise managed. This includes wastes that singly, or in combination, require special handling, treatment, or disposal because they are, or may be, ignitable, radioactive, corrosive, reactive, toxic infectious, an irritant, or a strong sensitizer. For the purpose of this chapter it means any material that is subject to the Uniform Hazardous Waste Manifest requirements of the U.S. Environmental Protection Agency (U.S. EPA) as specified in Title 40 CFR, Part 262.

Land Disposal Restriction (LDR) form

Logistics and Technical Information Division (LTID)

NASA Policy Directive (NPD)

National Emission Standard for Asbestos (NESHAPS)

Occupational Safety and Health Administration (OSHA)

Ohio Environmental Protection Agency (OEPA)

Plum Brook Station (PBS)

Resource Conservation and Recovery Act (RCRA)

Solid waste.—A solid waste is a material that, in general practice, is any discarded material not specifically excluded by the Resource Conservation Recovery Act (RCRA). A discarded material is any material (solid, liquid, or contained gas), which is abandoned (disposed, burned, or incinerated), recycled, or considered inherently wastelike. Basically, any material that does not have a continuing usefulness and is being discarded may be defined as a solid waste.

System for Administration, Training, and Educational Resources at NASA (SATERN)

Universal waste.—Any of the following hazardous wastes that are managed under the universal waste requirements of 40 CFR, Part 273: (1) batteries as described in 273.2; (2) pesticides as described in 273.3; (3) mercury-containing equipment as described in 273.4; and (4) lamps as described in 273.5.

Waste Management (WM)